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**WHAT IS CLAIMED IS:**

1           1. Apparatus for selectively receiving a radio frequency (RF) signal,  
2 comprising:

3           an array of antenna elements for receiving the RF signal;  
4           a navigational controller for determining a pointing vector from  
5 coordinate information; and  
6           beam-forming electronics connected to the array of antenna elements and  
7 the navigational controller for forming reception lobes.

1           2. The apparatus of claim 1, wherein the elements of the array comprise  
2 dual-frequency patch elements.

1           3. The apparatus of claim 1, wherein the beam-forming electronics form the  
2 reception lobes by adjusting the phase of the elements of the array.

1           4. The apparatus of claim 1, further comprising an antenna output from the  
2 beam-forming electronics.

1           5. The apparatus of claim 1, wherein the elements of the array are arranged  
2 in a symmetric configuration.

1           6. The apparatus of claim 5, wherein the elements of the array are arranged  
2 in a radially symmetric configuration.

1           7. The apparatus of claim 1, wherein the RF signals comprise signals from  
2 at least one global positioning system (GPS) satellite and the pointing vector  
3 comprises a satellite pointing vector.

1           8. The apparatus of claim 1, wherein the reception lobes have a width of 25  
2 degrees or less.

1           9. The apparatus of claim 1, wherein said beam-forming electronics  
2 comprises:

3                 at least one phase shifter connected to the array of antenna elements for  
4 shifting the phase of the received RF signal; and

5                 a beam-forming algorithm processor connected to the at least one phase  
6 shifter and the navigational controller for calculating an amount by which the at  
7 least one phase shifter shifts the received RF signals in response to the pointing  
8 vector.

1           10. The apparatus of claim 9, wherein the at least one phase shifter  
2 comprises an array of phase shifters.

1           11. The apparatus of claim 10, wherein said beam-forming electronics  
2 comprises a means for summing outputs of each phase shifter of the array of phase  
3 shifters.

1           12. The apparatus claim 11, further comprising an antenna output from  
2 said means for summing outputs of each phase shifter, of the beam-forming  
3 electronics.

1           13. The apparatus of claim 9, wherein the output of the phase shifters  
2 constructively amplifies selectively received RF signals by an amplification factor  
3 by aligning selective reception lobes of each element of the array of antenna  
4 elements, while interference signals from undesired sources are combined by the

1 phase shifters in a random manner, such that the interference signals experience  
2 essentially no amplification.

1 14. The apparatus of claim 13, wherein the constructive amplification  
2 amplifies desired, selectively received RF signals by at least 12 dB.

1 15. The apparatus of claim 13, wherein the interference signals have a  
2 strength of -30 dB.

1 16. The apparatus of claim 1, wherein the navigational controller  
2 comprises:

3 a receiver for receiving RF signal transmissions conveying absolute  
4 position information of the apparatus;

5 an inertial measurement unit (IMU) for measuring changes in relative  
6 position of the apparatus; and

7 a navigation processor connected to the receiver, the IMU, and the  
8 beam-forming algorithm processor for receiving absolute and relative position  
9 information from the receiver and the IMU, and calculating the pointing vector  
10 from the absolute and relative position information, and transmitting the pointing  
11 vector to the beam-forming algorithm processor.

1 17. The apparatus of claim 16, wherein the receiver comprises a GPS  
2 receiver.

1 18. The apparatus of claim 17, wherein the GPS receiver contains  
2 satellite almanac information comprising location information of satellites.

1            19. The apparatus of claim 16, wherein the IMU comprises a vibrational  
2 sensor.

1            20. The apparatus of claim 16, wherein the IMU comprises a gyroscopic  
2 sensor.

1            21. The apparatus of claim 20, wherein the gyroscopic sensor comprises  
2 a laser gyroscopic sensor.

1            22. The apparatus of claim 16, wherein the IMU comprises an  
2 accelerometer.

1            23. The apparatus of claim 16, wherein the IMU is a micro-machined  
2 device.

1            24. The apparatus of claim 16, wherein the relative position information  
2 comprises a change in velocity.

1            25. The apparatus of claim 16, wherein the relative position information  
2 comprises a change in angle.

1            26. The apparatus of claim 16, wherein the navigation processor is  
2 connected to a host.

1            27. The apparatus of claim 26, wherein the connection with the host  
2 provides input and output (I/O) communications between the navigation processor  
3 and the host.

1           28. The apparatus of claim 16, wherein the satellite pointing vector is  
2 updated using a pre-determined refresh rate.

1           29. The apparatus of claim 28, wherein refresh rate is 200 Hz.

1           30. The apparatus of claim 28, wherein the refresh rate corresponds to an  
2 update rate of the reception lobes.

1           31. A method for selectively receiving a radio frequency (RF) signal,  
2 comprising the steps of:  
3           receiving an RF signal using an array of antenna elements;  
4           determining a pointing vector from coordinate information; and  
5           forming reception lobes of the antenna array to detect RF signal sources  
6 in the direction of the pointing vector.

1           32. The method of claim 31, wherein the step of determining a pointing  
2 vector determines a satellite pointing vector.

1           33. The method of claim 31, wherein the step of determining is  
2 accomplished using actual coordinate information.

1           34. The method of claim 31, wherein the step of determining is  
2 accomplished using relative coordinate information.

1           35. The method of claim 31, wherein the step of forming the reception  
2 lobes is accomplished by shifting the phase of an RF signal received in the step of  
3 receiving.

1           36. The method of claim 31, further comprising the steps of:  
2                 shifting the phase of signals from antenna elements in the array to obtain  
3           phase-shifted signals; and  
4                 summing the phase-shifted signals obtained in the step of shifting in a  
5           manner such that desired RF signals in the direction of the pointing vector are  
6           constructively summed, providing an effective amplification of the desired RF  
7           signals, while interference RF signals not in the direction of the pointing vector  
8           are not effectively amplified due to random shifting of the interference RF signals.